JMYT-236US

Appln. No.: 09/807,655

Amendment Dated February 10, 2004

Reply to Office Action of November 10, 2003

<u>Amendments t the Claims:</u> This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1-16. (Canceled)

- 17. (Currently Amended) A process for the manufacture of a membrane, comprising the steps of
 - (i) forming a porous substrate by a process comprising the steps of
 - a. dispersing fibres in water to form a slurry;
 - depositing the slurry formed in step (a) onto a mesh bed to form a fibre network;
 - c. drying and compacting the fibre network formed in step (b); and
 - d. applying before or after step (c), to the fibre network, a dispersion of a binder comprising both silica and a fluorinated polymer; and thereafter,
 - (ii) impregnating the fibre matrixporous substrate with a polymeric material to produce a membrane.
- 18. (Previously Presented) A process according to claim 17, wherein step (ii) is carried out by nip roller coating of the substrate to fill it with a solution of ion-conducting polymeric material, and further compaction and drying of the membrane.

19.-22. (Canceled)

- 23. (Previously Presented) A process according to claim 17, wherein the fibres are randomly oriented in said porous substrate.
- 24. (Previously Presented) A process according to claim 17, wherein the silica comprises a colloidal aqueous solution, or a silica powder dispersed in water.

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25. (Previously Presented) A process according to claim 17, wherein the fluorinated hydrocarbon polymer comprises one or more non-ion-conducting polymer(s).

- 26. (Previously Presented) A process according to claim 25, wherein the non-ion-conducting polymer is selected from the group consisting of polytetrafluoroethylene (PTFE), fluorinated ethylene-propylene (FEP), tetrafluorethylene-ethylene (ETFE) copolymers, poly(vinylfluoride) (PVF) and poly(vinylidinefluoride) (PVDF).
- 27. (Previously Presented) A process according to claim 17, wherein the silica comprises a colloidal silica and the polymer comprises PTFE.
- 28. (Previously Presented) A process according to claim 17, wherein the ratio of silica to polymer is in the range of from 95:5% to 5:95% based on weight/weight solid materials in the binder mixture.
- 29. (Previously Presented) A process according to claim 28, wherein the ratio of silica to polymer is in the range of from 70:30% to 30:70% based on weight/weight solid materials in the binder mixture.
- 30. (Previously Presented) A process according to claim 29, wherein the ratio of silica to polymer is about 50:50% based on weight/weight solid materials in the binder mixture.
- 31. (Previously Presented) A process according to claim 17, wherein the mixed binder is in the form of a dilute aqueous dispersion.
- 32. (Previously Presented) A process according to claim 31, wherein the dilute aqueous dispersion has about 10% weight solids in the aqueous solution.
- 33. (Previously Presented) A process according to claim 17, wherein the fibres comprise at least one glass or silica.

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(Previously Presented) A process according to claim 17, wherein the fibres 34. have a diameter in the range of from $0.1 \mu m$ to $50 \mu m.$